

Further, each of claims 11 and 12 has been amended to correct a typographical error by replacing "born" with "bone". Support for this amendment can be found throughout the specification; for example, at page 8, first full paragraph. No new matter has been added.

Entry of the amendments and reconsideration on the merits is respectfully requested.

III THE REJECTION OF CLAIMS 6 and 7 UNDER 35 U.S.C. § 112, SECOND PARAGRAPH, SHOULD BE WITHDRAWN

Claims 6 and 7 stand rejected pursuant to 35 U.S.C. § 112, second paragraph. In particular, the Examiner states that the term "superelasticity" is not defined by the specification adequately to appraise one of ordinary skill in the art of the scope of the invention.

Applicants submit that the term "superelasticity" is a term of art which was well known to the ordinary skilled artisan at the time of the invention. Applicants submit herewith an Information Disclosure Statement citing, among others, pages 631-651 of Phillips' Science of Dental Materials, Third Ed. by Kenneth J. Anusavice. The term "Superelasticity" is defined at least at page 649, second full paragraph, of this reference.

Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, second paragraph, is requested.

IV THE REJECTION OF CLAIMS 1-7, 9-11 and 16 UNDER 35 U.S.C. § 102(b) SHOULD BE WITHDRAWN

Claims 1-7, 9-11 and 16 stand rejected under 35 U.S.C. § 102(b) over the English language translation of the abstract of JP 10-219375 A to Araya et al. ("Araya").

Applicants respectfully disagree with the grounds of this rejection.

Araya discloses the β -titanium alloy for biological use. Moreover, Araya discloses the application of the alloy for the orthodontics material. However, the alloy of Araya is only β -titanium alloy, not shape-memory material.

Araya discloses the β -titanium alloy having Nb and Ta which are known as material for β -stabilizing elements and equivalent as substitutes for Mo as disclosed in the Table 2.5 (page 10) and Table 2.6 (page 11) of the document entitled Materials Properties Handbook: Titanium Alloys, referenced in the Information Disclosure Statement submitted herewith. The alloy of Araya is a β -titanium alloy for biological use having age-hardening character and solid-solubility.

On the other hand, the alloy of the present invention has shape-memory by controlling the properties of the alloy, namely, martensite transformation starting temperature and austenite transformation finishing temperature as well as by incorporating Nb, Ta and Sn in strictly controlled amount. These characteristics are influenced not only the materials, but also by thermal hysteresis and secondary processing.

For at least these reasons, Applicants submit that Araya does not disclose or suggest the invention recited in claim 1.

**V THE OBVIOUSNESS REJECTION OF CLAIMS 8 AND 12-15 SHOULD BE
WITHDRAWN**

Each of claims 8 and 12-15 stands rejected as allegedly obvious over Araya in view of secondary references. Specifically, claim 8 stands rejected as allegedly unpatentable over Araya in view of U.S. Patent No. 5,429,501 to Farzin-Nia et al.; claim 12 stands rejected as allegedly unpatentable over Araya in view of U.S. Patent No. 6,127,597 to Beyar et al.; claim 13 stands rejected as allegedly unpatentable over Araya in view of U.S. Patent No. 4,795,458 to Regan; claim 14 stands rejected as allegedly unpatentable over Araya in view of U.S. Patent No. 5,215,105 to Kizelshteyn et al. and claim 15 stands rejected as allegedly unpatentable over Araya in view of U.S. Patent No. 5,551,871 to Besselink et al.

Each of claims 8 and 12-15 depends from claim 1 which, as discussed above, is neither disclosed nor suggested by Araya. For at least this reason, Applicants respectfully submit that each of claims 8 and 12-15 are patentable over Araya as combined with the cited secondary reference. Accordingly, Applicants will not address the Examiner's reliance upon the cited secondary references.

Reconsideration and withdrawal of this rejection is requested.

VI CONCLUSION

It is therefore respectfully submitted that claims 1-16 are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Response to Office Action
U.S. Application No. 09/710,430
Attorney's Docket No. 11151/5

The Examiner is invited to contact the undersigned attorney if a telephonic communication is believed to be helpful in advancing the examination of the present application.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. §1.16 or §1.17 to Deposit Account No. 11-0600.

Respectfully submitted,



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ATTACHMENT TO RESPONSE TO Office Action

IN THE SPECIFICATION:

Please replace the first full paragraph of page 1 with:

This invention relates to shape memory alloys which are transiently or semipermanently usable in almost every part of human.

Please replace the paragraph beginning on line 12 of page 2 with:

Under these circumstances, the inventors have made extensive studies to provide Ti alloys having highly biocompatible elements and preferably having the shape memory effects for biological use, and found that a ternary alloy containing Sn as the third element can be a non-toxic and non-allergic alloy having ~~ean~~ an appropriate shape memory property for biological use. The present invention was accomplished based on this finding.

IN THE CLAIMS:

11. (AMENDED) A ~~berne~~ bone material comprising the alloy as defined in claim 1.

12. (AMENDED) A ~~bern~~ bone fixator comprising the alloy as defined in claim 1.